Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

95-PCA-094

DEC 28 1994

Mr. David L. Lundstrom
Section Manager
200 Areas
Nuclear Waste Program
State of Washington
Department of Ecology
1315 West Fourth Avenue
Kennewick, Washington 99336

Mr. Douglas R. Sherwood
Hanford Project Manager
U.S. Environmental Protection Agency
712 Swift Boulevard, Suite 5
Richland, Washington 99352

Dear Messrs. Lundstrom and Sherwood:

HANFORD FACILITY DANGEROUS WASTE PART A PERMIT APPLICATION FORM 3, REVISION 2, FOR THE PLUTONIUM-URANIUM EXTRACTION STORAGE TUNNELS (WA7890008967) (TSD: S-2-1)

Enclosed is the Hanford Facility Dangerous Waste Part A Permit Application (Part A) Form 3, Revision 2, for the Plutonium-Uranium Extraction (PUREX) Storage Tunnels. The PUREX Storage Tunnels are located in the 200 East Area of the Hanford Facility and are used for the storage of failed PUREX Plant equipment.

The Part A, Form 3, has been revised to add Dangerous Waste Numbers D006 (cadmium), D007 (chromium), State-only Waste Numbers WT01 (toxic, extremely hazardous waste), and WC02 (carcinogenic, dangerous waste) to existing Process Code S05 (storage-miscellaneous). Also, State-only Dangerous Waste Numbers WT02 (state-only, toxic, dangerous waste) and WP01 (state-only, persistent, extremely hazardous waste) have been added to Process Code S05 for fluorothene. State-only Dangerous Waste Number WT01 was removed from Dangerous Waste Number D008 (lead) in accordance with Washington Administrative Code 173-303-100. The Part A, Form 3, also has been revised to convert all English based measures to metric in accordance with U.S. Department of Energy direction.

The revisions to this Part A, Form 3, have been made to allow for additional storage activities associated with PUREX Plant transition efforts. These changes to the Part A, Form 3, were made in compliance with Washington Administrative Code 173-303. This regulation requires the submittal of a revised Part A, Form 3, that addresses the identification of a previously unidentified dangerous waste to be stored at a treatment, storage, and/or disposal unit under interim status.

Should you have any questions regarding the PUREX Storage Tunnels Part A, Form 3, please contact Mr. C. E. Clark of the U.S. Department of Energy, Richland Operations Office on (509) 376-9333 or Mr. R. C. Bowman of the Westinghouse Hanford Company on (509) 376-4876.

Sincerely,

James E. Rasmussen, Acting Program Manager
Office of Environmental Assurance,
Permits, and Policy
DOE Richland Operations Office

EAP:CEC

William T. Dixon, Manager
Environmental Services
Westinghouse Hanford Company

Enclosure:
Plutonium-Uranium Extraction
Storage Tunnels Dangerous Waste
Part A Permit Application
Form 3, Revision 2

cc w/encl:
EDMC, H6-08
Administrative Record
R. Bowman, WHC
B. Burke, CTUIR
D. Duncan EPA
M. Jaraysi, Ecology
R. Jim, YIN
D. Powaukee, NPT
S. Price, WHC

cc w/o encl:
W. Dixon, WHC

ENCLOSURE

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 character/inch).

FORM **3**

DANGEROUS WASTE PERMIT APPLICATION

1. EPA/STATE I.D. NUMBER: W A 7 8 9 0 0 0 8 9 6 7

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED *(mo., day, & yr.)*	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below (mark one box only) to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA/STATE I.D. Number, or if this is a revised application, enter your facility's EPA/STATE I.D. Number in Section I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

☐ 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

FOR EXISTING FACILITIES, PROVIDE THE DATE *(mo., day, & yr.)* OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

MO.	DAY	YR.
0 6	1 5	5 6

☐ 2. NEW FACILITY *(Complete item below)*

FOR NEW FACILITIES, PROVIDE THE DATE *(mo., day, & yr)* OPERATION BEGAN OR IS EXPECTED TO BEGIN

MO.	DAY	YR.

B. REVISED APPLICATION *(place an "X" below and complete Section I above)*

☒ 1. FACILITY HAS AN INTERIM STATUS PERMIT

☐ 2. FACILITY HAS A FINAL PERMIT

III. PROCESSES - CODES AND CAPACITIES

A. PROCESS CODE - Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the *(Section III-C)*.

B. PROCESS DESIGN CAPACITY - For each code entered in column A enter the capacity of the process.

1. AMOUNT - Enter the amount.

2. UNIT OF MEASURE - For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER (barrel, drum, etc)	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D80	GALLONS OR LITERS
LANDFILL	D81	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D82	*ACRES OR HECTARES*
OCEAN DISPOSAL	D83	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D84	GALLONS OR LITERS

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Section III-C.)	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G
LITERS	L
CUBIC YARDS	Y
CUBIC METERS	C
GALLONS PER DAY	U

UNIT OF MEASURE	UNIT OF MEASURE CODE
LITERS PER DAY	V
TONS PER HOUR	D
METRIC TONS PER HOUR	W
GALLONS PER HOUR	E
LITERS PER HOUR	H

UNIT OF MEASURE	UNIT OF MEASURE CODE
ACRE-FEET	A
HECTARE-METER	F
ACRES	B
HECTARES	Q

EXAMPLE FOR COMPLETING SECTION III *(shown in line numbers X-1 and X-2 below): A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons.* The facility also has an incinerator that can burn up to 20 gallons per hour.

LINE NUMBER	A. PROCESS CODE *(from list above)*	B. PROCESS DESIGN CAPACITY 1. AMOUNT *(specify)*	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE *(enter code)*	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE *(from list above)*	B. PROCESS DESIGN CAPACITY 1. AMOUNT *(specify)*	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE *(enter code)*	FOR OFFICIAL USE ONLY
X-1	S 0 2	600	G		5				
X-2	T 0 3	20	E		6				
1	S 0 5	24,007	C		7				
2					8				
3					9				
4					10				

CONTINUE ON REVERSE

Continued from the front.

III. PROCESSES (continued)

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESS (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

S05

The PUREX Storage Tunnels are a miscellaneous unit (S05) used for storage of mixed waste subject to the requirements of 40 CFR 264, Subpart X. The two tunnels are designed to store discarded equipment. Since being placed into service, various types of equipment containing mixed waste have been stored in the tunnels on railcars. Not all equipment stored in the tunnels contain mixed waste.

The construction of Tunnel 1 was completed in 1956. The maximum storage volume of the tunnel is approximately 4,129 cubic meters (5,400 cubic yards). The tunnel is approximately 5.8 meters (19 feet) wide by 6.7 meters (22 feet) high by 107 meters (350 feet) long and provides storage space for eight railcars. Between June 1960 and January 1965, all eight railcar positions were filled and the tunnel was subsequently sealed. The combined volume of the equipment stored in Tunnel 1 is approximately 596 cubic meters (780 cubic yards).

The construction of Tunnel 2 was completed in 1964. The maximum storage volume of the tunnel is approximately 19,878 cubic meters (26,000 cubic yards). Tunnel 2 is approximately 5.8 meters (19 feet) wide by 6.7 meters (22 feet) high by 512 meters (1,680 feet) long and provides storage space for 40 railcars. The first railcar was placed in Tunnel 2 in December 1967 and as of October 1994, 19 railcars have been placed in the tunnel. The combined volume of equipment stored on the 19 railcars presently in Tunnel 2 is approximately 1,529 cubic meters (2,000 cubic yards).

IV. DESCRIPTION OF DANGEROUS WASTES

A. DANGEROUS WASTE NUMBER - Enter the four digit number from Chapter 173-303 WAC for each listed dangerous waste you will handle. If you handle dangerous wastes which are not listed in Chapter 173-303 WAC, enter the four digit number(s) that describes the characteristics and/or the toxic contaminants of those dangerous wastes.

B. ESTIMATED ANNUAL QUANTITY - For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE - For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed dangerous waste: For each listed dangerous waste entered in column A select the code(s) from the list of process codes contained in Section III to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed dangerous wastes: For each characteristic or toxic contaminant entered in Column A, select the code(s) from the list of process codes contained in Section III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed dangerous wastes that possess that characteristic or toxic contaminant.

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: DANGEROUS WASTES DESCRIBED BY MORE THAN ONE DANGEROUS WASTE NUMBER - Dangerous wastes that can be described by more than one Waste Number shall be described on the form as follows:

1. Select one of the Dangerous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other Dangerous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other Dangerous Waste Number that can be used to describe the dangerous waste.

EXAMPLE FOR COMPLETING SECTION IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. DANGEROUS WASTE NO. *(enter code)*	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE *(enter code)*	D. PROCESSES 1. PROCESS CODES *(enter)*	D. PROCESSES 2. PROCESS DESCRIPTION *(if a code is not entered in D(1))*
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2			T 0 3 D 8 0	*included with above*

Continued from page 2.
NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

I.D. NUMBER *(entered from page 1)*: WA7890008967

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

LINE NO.	A. DANGEROUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	D006	454*	K	S05	Storage - Miscellaneous
2	WT01				
3	WC02				
4	D007				
5	WT01				
6	WC02				
7	D008	2,722*			
8	D009	45*			
9	WT01				
10	D011	680*			
11	D001				
12	WT01				
13	WP01	585*			
14	WT02				Included With Above
15					

* The estimated annual quantity of waste listed above represent the maximum quantity of waste placed in either tunnel in a given year. Future operations might necessitate an increase in excess of these estimates and a permit application revision could be pursued as required by dangerous waste regulations.

20					
21					
22					
23					
24					
25					
26					

Continued from the front.

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM SECTION D(1) ON PAGE 3.

The waste stored in the tunnels includes lead (D008) weights, counterweights, mercury (D009) in the dissolvers, chromium residue (D007) in concentrators and other solid waste, cadmium (D006) in canyon equipment and other solid waste, and silver salts (D011) from the silver reactors. The silver salts are considered ignitible (D001) because of the presence of silver nitrate. The dangerous waste may be considered toxic, extremely hazardous waste (WT01), toxic, dangerous waste (WT02), carcinogenic, dangerous waste (WC02), and/or persistent, extremely hazardous waste (WP01). The estimated amount of mixed waste currently stored in the tunnels is as follows.

TUNNEL NUMBER	DANGEROUS WASTE	AMOUNT[1]	LOCATION IN TUNNELS[2]
1	Lead (elemental)	227 kg	Positions 2 and 4
2	Silver Salts[3]	737 kg[4]	Positions 5 and 15
	Mercury (elemental)	129 kg	Positions 7, 9, and 11
	Fluorothene[5]	180 kg[6]	Position 14
	Lead (elemental)	2,760 kg	Positions 14 and 15
	Cadmium	13 kg	Position 15
	Chromium	.025 kg	Position 20

1 - The amounts indicated are approximates in kilograms (kg).
2 - Railcar positions start from the south end of the tunnel (Position 1 farthest south).
3 - A mixture of silver nitrate, silver halides and silver fines.
4 - Expressed as kilogram-equivalent of silver nitrate.
5 - Fluorothene - The trademark of Union Carbide Corperation for Polytrifluoromonochloroethylene.
6 - Assuming a density of 2.12 g/cm^3.

V. FACILITY DRAWING Refer to attached drawing.

All existing facilities must include in the space provided on page 5 a scale drawing of the facility *(see instructions for more detail)*.

VI. PHOTOGRAPHS Refer to attached photographs.

All existing facilities must include photographs *(aerial or ground-level)* that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas *(see instructions for more detail)*.

VII. FACILITY GEOGRAPHIC LOCATION This information is provided on the attached drawings and photos.

LATITUDE *(degrees, minutes, & seconds)*	LONGITUDE *(degrees, minutes, & seconds)*

VIII. FACILITY OWNER

[x] A. If the facility owner is also the facility operator as listed in Section VII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. *(area code & no.)*

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME *(print or type)*	SIGNATURE	DATE SIGNED
John D. Wagoner, Manager U.S. Department of Energy Richland Operations Office	John D. Wagoner	12/28/94

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME *(print or type)*	SIGNATURE	DATE SIGNED
SEE ATTACHMENT		

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

John D. Wagoner

Owner/Operator
John D. Wagoner, Manager
U.S. Department of Energy
Richland Operations Office

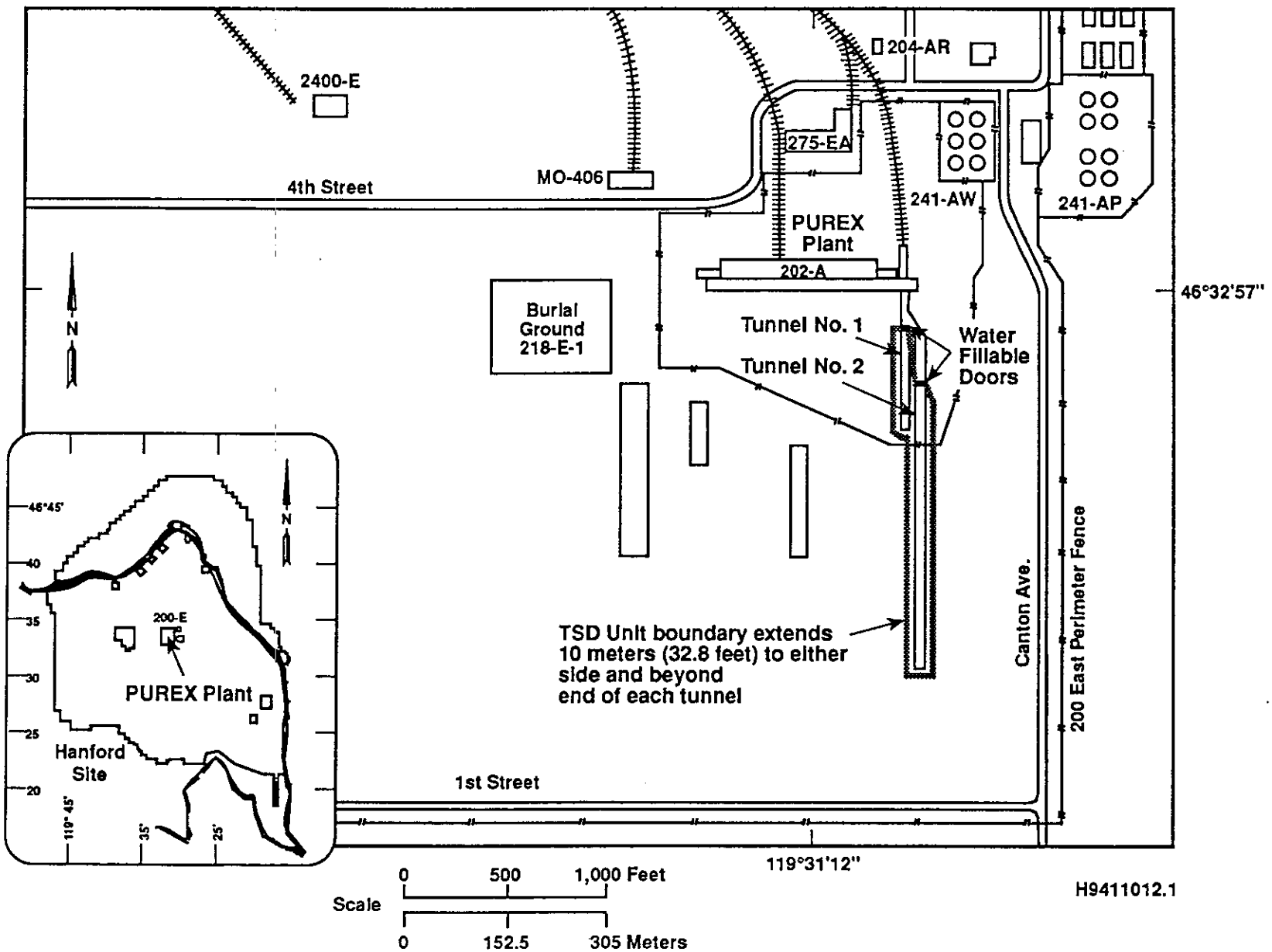
12/28/94
Date

A. LaMar Trego

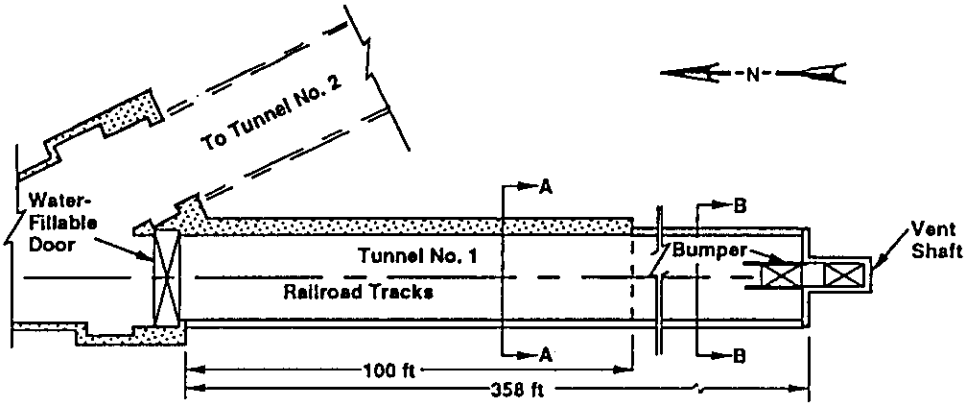
Co-operator
A. LaMar Trego, President
Westinghouse Hanford Company

12/7/94
Date

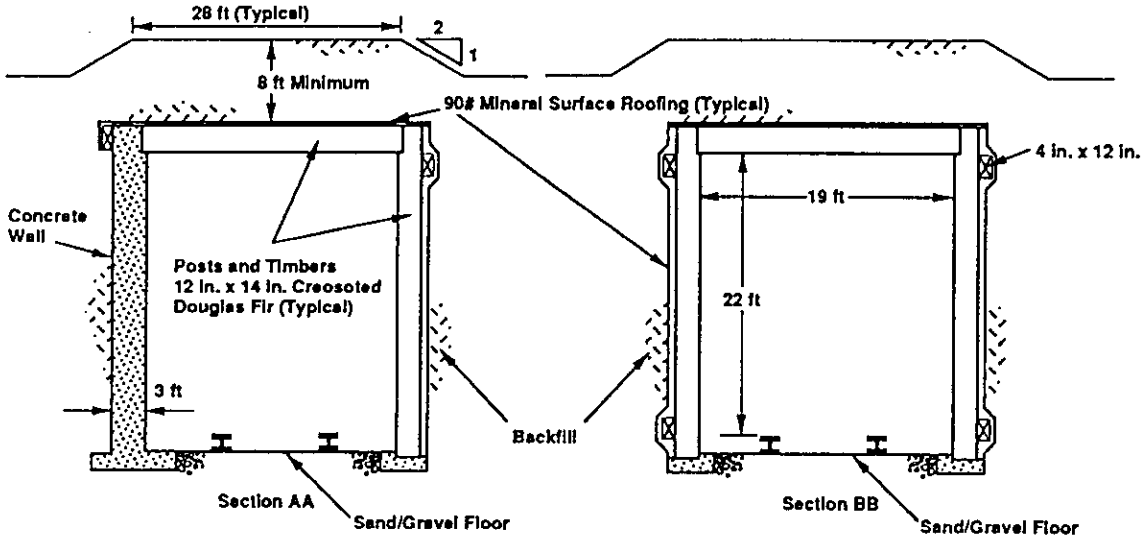
PUREX Storage Tunnels
Site Plan



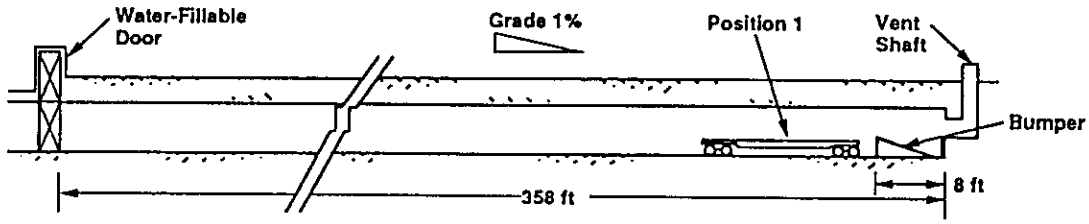
PUREX TUNNEL NO. 1 - DETAILS



Tunnel No. 1 - Plan View



PUREX Tunnel No. 1 - Section Views

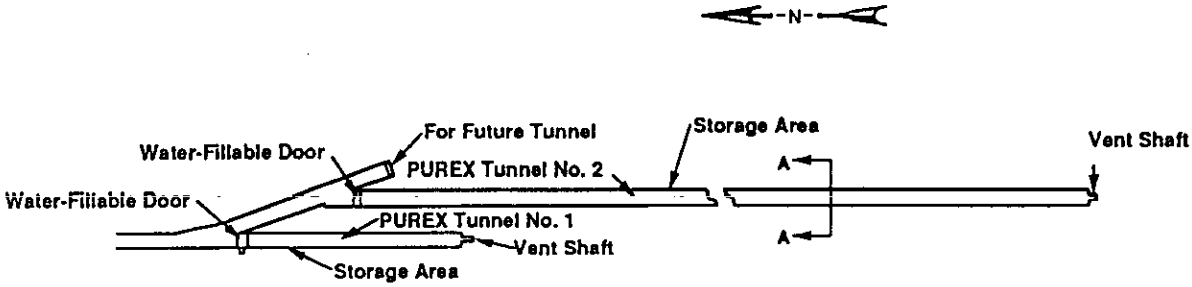


PUREX Tunnel No. 1 - Elevation View

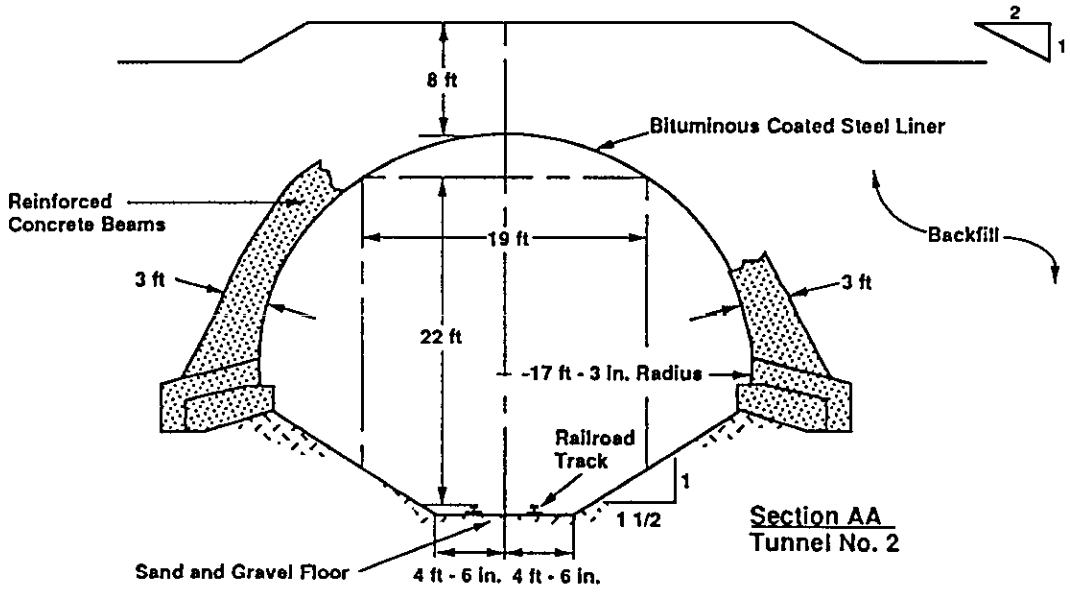
78910032.2

For conversion to meters multiply by 0.3048
For conversion to centimeters multiply by 2.54

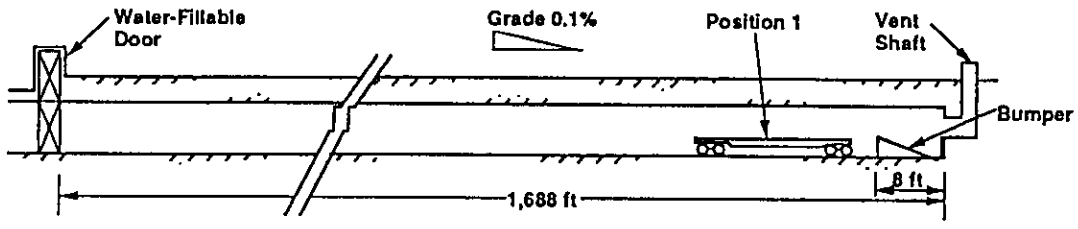
PUREX TUNNEL NO. 2 - DETAILS



PUREX Tunnels - Plan View



Section AA
Tunnel No. 2

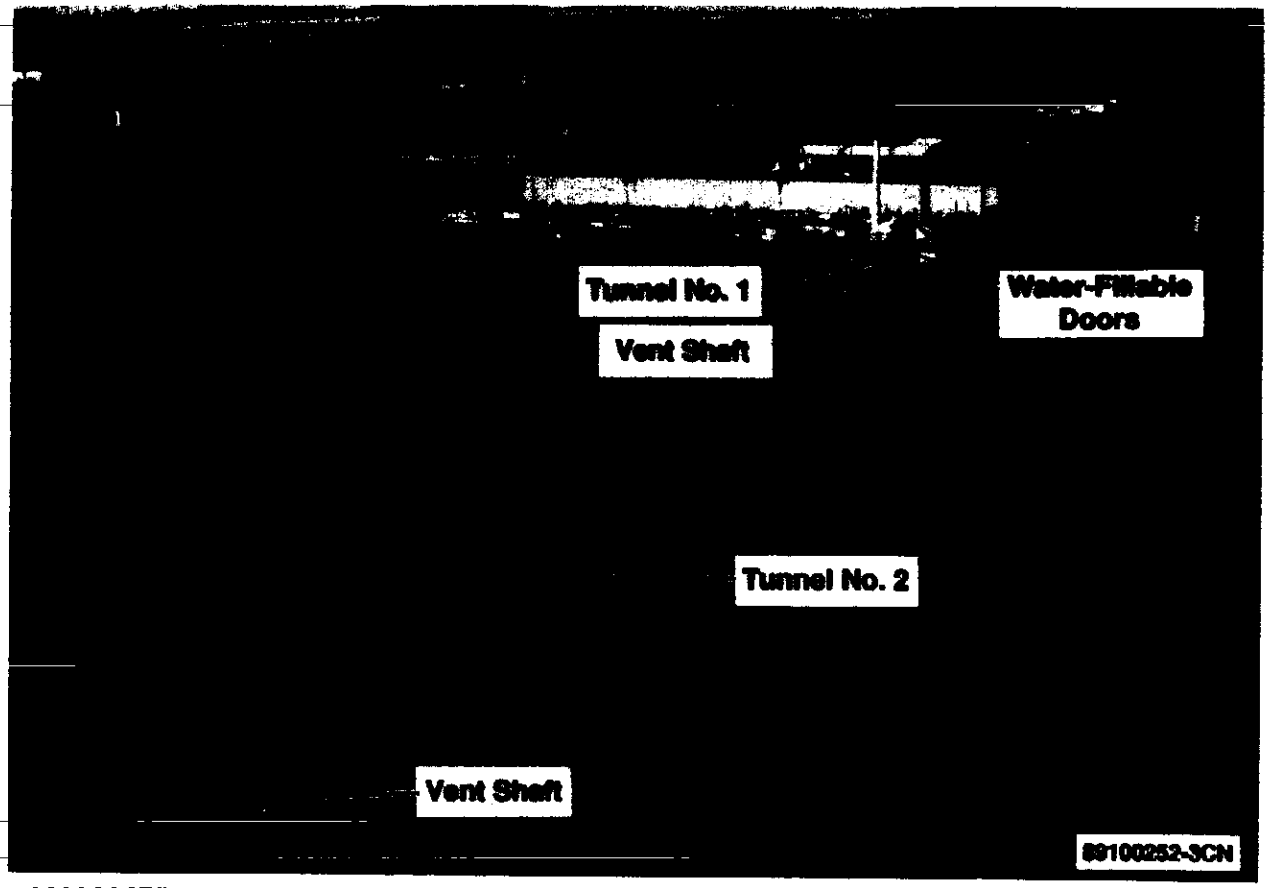


PUREX Tunnel No. 2 - Elevation View

78910032.1

For conversion to meters multiply by 0.3048
For conversion to centimeters multiply by 2.54

PUREX STORAGE TUNNELS



46°32'47"
119°31'07"

89100252-3CN
(PHOTO TAKEN 1989)